

SAFETY DATA SHEET

Crop Aid Nutrition Ltd.
213-8B 3110 8th St. East
Saskatoon, SK S7H 0W2
Ph: 1-866-249-0666



SECTION 1: Identification

Product identifier: **Rogue IX**
Synonyms: Not applicable.
Product Code Number: Not applicable.
Recommended use: Sequestered Fertilizer Solution.
Restrictions on use: Uses other than as recommended above.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: **Crop Aid Nutrition Ltd.**
Company Address: 213-8B 3110 8th St. East, Saskatoon, SK S7H 0W2
Company Telephone: 866-249-0666
Company Contact Name: Main Office
Emergency phone number: **Canutec 1-613-996-6666**

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with Hazardous Products Regulations (WHMIS 2015):

Physical hazards

Not classified as a physical hazard under GHS criteria.

Health hazards

Acute toxicity, Oral, Category 4.

Acute toxicity, Inhalation, Category 4.

Skin Corrosion, Category 1.

Serious eye damage, Category 1.

Specific target organ toxicity - repeated exposure, Category 2.

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word:

DANGER

GHS Hazard statement(s):

H302 + H332 - Harmful if swallowed or if inhaled.

H314 - Causes severe skin burns and eye damage.

H318 - Causes serious eye damage.

H373 – May cause damage to organ through prolonged or repeated exposure

GHS Precautionary statement(s):

Prevention:

- P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 - Wash skin thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P271 - Use only outdoors or in a well-ventilated area.
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
- P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 - Immediately call a POISON CENTER/doctor/physician.

- P321 - Specific treatment (see section 4 to 8 on this SDS and any additional information (where available) on this label).
- P363 – Wash contaminated clothing before reuse.

Storage:

- P405 – Restricted Entry, Store locked up when not in use

Disposal:

- P501 - Dispose of contents/container to an approved disposal site in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification: None known.

Percentage of ingredient(s) of unknown acute toxicity:

5% of the mixture consists of ingredients of unknown acute toxicity (oral).

8% of the mixture consists of ingredients of unknown acute toxicity (inhalation).

24% of the mixture consists of ingredients of unknown acute toxicity (dermal).

SECTION 3: Composition/information on ingredients

Mixture:

| Chemical name | Concentration(weight %) | CAS# |
|-----------------------------------|-------------------------|-------------|
| Monocarbamide dihydrogen sulphate | 15 – 20% | 21351-39-3 |
| Manganese sulphate monohydrate | 1 – 10% | 10034-96-5 |
| Zinc sulphate monohydrate | 1 – 10% | 7446-19-7 |
| Compatibility agent blend | 1 – 10% | Proprietary |

Note: The balance of the ingredients are not classified as hazardous, or are under the concentration limit to be classified as hazardous under the criteria of the Hazardous Products Regulations (WHMIS 2015).

SECTION 4: First-aid Measures

First-aid measures by route of exposure:

Inhalation: If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get prompt medical attention.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse.

Eye contact: In case of contact, immediately flush eyes with plenty of water, holding eyelids apart for at least 15 minutes. If easy to do, remove contact lenses, if worn. Do not permit victim to rub eyes. Get immediate medical attention.

Ingestion: If victim is fully conscious, immediately give a large amount of water to drink and induce vomiting. Never give anything by mouth to a victim who is unconscious or having convulsions. Apply artificial respiration if necessary. Call a doctor or poison control center immediately.

Most important symptoms and effects (acute or delayed): Contact with eyes may result in severe irritation. Contact with the skin may result in severe burns and may cause dermatitis. May cause irritation and burning to the upper respiratory tract. Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause severe burns and severe pulmonary injury and into the lungs due to vomiting can cause chemical pneumonitis, which can be fatal. Persons with preexisting dermatitis, respiratory disorders, or an allergic history should use extra care in handling this product.

Immediate medical attention and special treatment, if necessary:

There is no specific antidote and treatment should be directed at the control of symptoms and the clinical condition. IF POISONING IS SUSPECTED, or any symptoms are serious, immediately contact the poison information center, doctor or nearest hospital. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms, and follow the advice given.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Water spray/fog, foam, dry chemical, or carbon dioxide are recommended.

Unsuitable extinguishing media: Avoid excessive water.

Specific hazards arising from the hazardous product: If a spill or leak has not ignited, use water spray to disperse the vapors. Treat as a liquid chemical type fire where discharges to the environment are to be controlled as quickly as possible. Use of buildings, area and equipment is to be prevented until properly decontaminated.

Hazardous combustion products include oxides of carbon, nitrogen and sulfur.

Special protective equipment and precautions for fire-fighters:

Wear self-contained breathing apparatus and protective clothing. Fight fire from a protected location. Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool. Prevent buildup of vapors to explosive concentrations.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Evacuate danger area. Stay upwind and away from spill/release. Avoid direct contact with liquid and vapors. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out.

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up: Corrosive liquid. Stop leak and clean up spills immediately, wearing protective clothing.

In case of a major spill: Isolate and barricade area and keep bystanders away. Contact local government for advice.

For small Spills: Stop leak, isolate area and contain spill keeping out of sewers and drains by diking.

Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Sweep up carefully and shovel into a disposable container. Disposal containers must be labeled appropriately. Rinse area with water and soak up with absorbent. Sweep and shovel up into a disposable container. For contaminated soil or gravel, remove 5 – 7 cm (2 – 3”) for disposal and replace with fresh soil or gravel. See Section 13 for waste disposal information.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and Storage

Precautions for safe handling: Keep out of reach of children, unauthorized persons and animals. Avoid eye contact and prolonged skin contact. Avoid inhalation of mists. Wear appropriate personal protective equipment (see section 8), and after work, remove protective equipment, and wash hands before eating, smoking, drinking, or using the toilet. Clean up spilled material immediately, and clean clothes, equipment, and work area after use.

Conditions for safe storage (including incompatible materials): Keep product above 0°F. Store in the original totes, cases or approved mini-bulk units. Do not store in aluminum or mild steel containers. Keep container(s) tightly closed, upright and properly labeled. Keep away from incompatible materials (see Section 10) and food / feedstuffs. Protect container(s) against physical damage. Clean up any spill material immediately.

SECTION 8: Exposure controls/personal protection

Control parameters, including occupational exposure guidelines or biological exposure limits and the source of those values:

| Canada - Alberta Occupational Exposure Limits | | |
|--|-----------------------------|------------------------------|
| Substance | PEL-TWA (8 hour) | PEL-STEL (15 min) |
| Monocarbamide dihydrogen sulphate | No data available | No data available |
| Manganese sulphate monohydrate (Manganese, elemental & inorganic compounds, as Mn) | 0.2 mg/m ³ | No data available |
| Zinc sulphate monohydrate | No data available | No data available |
| Compatibility agent blend | No data available | No data available |

| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | | |
|--|---|--|
| Substance | 8-hour average Contamination Limit | 15-minute average Contamination Limit |
| Monocarbamide dihydrogen sulphate | No data available | No data available |
| Manganese sulphate monohydrate (Manganese and inorganic compounds, (as Mn)) | 0.2 mg/m ³ | 0.6 mg/m ³ |
| Zinc sulphate monohydrate | No data available | No data available |
| Compatibility agent blend | No data available | No data available |

Appropriate engineering controls: Ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLVs listed. Develop written safety and inspection procedures. Warehouses, production areas, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

Individual protection measures (e.g. personal protective equipment):

Eye/face protection: Wear safety glasses with side shields, goggles or face shield when direct exposure to product, splash or spray is likely. Use equipment for eye protection tested and approved under appropriate government standards such as CSA.

Skin and Hand protection: Wear disposable coveralls, lab coat, or apron to prevent skin contact. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: If engineering controls do not keep airborne concentrations below established exposure limits or to an acceptable level (in countries where exposure limits have not been established), a CSA approved respirator must be worn. Follow CSA standard Z94.4-02 requirements whenever workplace conditions warrant use of a respirator.

Other: Eye wash and quick-drench shower facilities should be available in the work area. Chemical aprons should be used.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

| | |
|--|-------------------------------------|
| Physical state: | Liquid |
| Colour: | Clear slight pink. |
| Odour: | Very slight pleasant odour. |
| Odour threshold: | No data available |
| pH: | 1.5 to 2.0 (0.5% solution in water) |
| Melting point/freezing point: | No data available-5 degrees C |
| Initial boiling point/boiling range | No data available |
| Flash point: | Not combustible |
| Evaporation rate: | No data available |
| Flammability (solid, gas): | Not applicable |

| | |
|--|-------------------|
| Upper/lower flammability/explosive limits | Not applicable |
| Vapour pressure: | No data available |
| Vapour density (air=1): | No data available |
| Relative density: | 1.23 gm/L @ 20°C |
| Solubility: | No data available |
| Partition coefficient (n-octanol/water): | No data available |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Viscosity: | 150 cps. at 20°C |

SECTION 10: Stability and Reactivity

| | |
|--|--|
| Reactivity: | Not chemically reactive. |
| Chemical stability: | Stable under normal ambient and anticipated conditions of use. |
| Possibility of hazardous reactions: | Hazardous reactions not anticipated. |
| Conditions to avoid: | None known. |
| Incompatible materials: | Strong oxidizing and reducing agents, bases, many metals (aluminum). |
| Hazardous decomposition products: | Oxides of carbon, nitrogen and toxic phosphorous compounds. |

SECTION 11: Toxicological information

Relevant routes of exposure: Inhalation, Ingestion, Skin, Eyes

Symptoms related to the physical, chemical, and toxicological characteristics:

None known.

Delayed and immediate effects, and chronic effects from short-term and long-term exposure:

None known

Numerical measures of toxicity:

Acute toxicity estimates:

Ingredient Information:

| Substance | Test Type (species) | Value |
|-----------------------------------|---------------------------------------|-------------------|
| Monocarbamide dihydrogen sulphate | LD ₅₀ Oral (Rat) | 350 mg/kg |
| | LD ₅₀ Dermal (Rabbit) | > 2000 mg/kg |
| | LC ₅₀ Inhalation (Rat) | No data available |
| Manganese sulphate monohydrate | LD ₅₀ Oral (Rat) | No data available |
| | LD ₅₀ Dermal (Rabbit) | No data available |
| | LC ₅₀ Inhalation (Rat) | No data available |
| Zinc sulphate monohydrate | LD ₅₀ Oral (Rabbit) | 2000 mg/kg |
| | LD ₅₀ Oral (Mouse) | 245 mg/kg |
| | LD ₅₀ Subcutaneous (Mouse) | 781 mg/kg |
| | LD ₅₀ Intravenous (Rat) | 69900 ug/kg |
| Compatibility agent blend | LD ₅₀ Oral (Rat) | No data available |
| | LD ₅₀ Dermal (Rabbit) | No data available |
| | LC ₅₀ Inhalation (Rat) | No data available |

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available

Acute Dermal Toxicity - no data available

Acute Inhalation Toxicity - no data available

| | |
|---|--|
| Skin corrosion/irritation: | Contact with the skin may result in severe burns and may cause dermatitis. Skin contact may aggravate an existing dermatitis condition. |
| Serious eye damage/eye irritation: | Contact with eyes may result in severe irritation: permanent injury may result. |
| Respiratory sensitization: | No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification). |
| Skin sensitization: | No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification). |
| Germ cell mutagenicity: | No information available on the mixture, however none of the components have been classified for Germ cell mutagenicity (or are below the concentration threshold for classification). |
| Carcinogenicity: | No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification). |
| Reproductive toxicity: | No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification). |
| Specific target organ toxicity- Single exposure: | No information available on the mixture, however none of the components have been classified for Specific target organ toxicity-Single exposure (or are below the concentration threshold for classification). |
| Specific target organ toxicity- Repeat exposure: | No information available on the mixture, however one of the components (Monocarbamide dihydrogen sulphate) has been classified for STOT and may cause damage to organ through prolonged or repeated exposure. |
| Aspiration hazard: | No information available on the mixture, however none of the components have been classified for Aspiration hazard (or are below the concentration threshold for classification). |
| Further information: | No data available |

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

| Substance | Test Type | Species | Value |
|-----------------------------------|------------------|--|-------------------|
| Monocarbamide dihydrogen sulphate | LC ₅₀ | Fish - Gasterosteus aculeatus (three-spined stickleback) | 80 ppm (96h) |
| | EC ₅₀ | Invertebrate | No data available |
| | EC ₅₀ | Algae Pseudokirchneriella subcapitata | 11.5 ppm (126h) |
| Manganese sulphate monohydrate | LC ₅₀ | Fish | No data available |
| | EC ₅₀ | Invertebrate | No data available |
| | EC ₅₀ | Algae | No data available |
| Zinc sulphate monohydrate | LC ₅₀ | Fish -Barbus sophore (pool barb) | 16220 ug/L (24h) |
| | EC ₅₀ | Invertebrate | No data available |
| | EC ₅₀ | Algae | No data available |
| Compatibility agent blend | LC ₅₀ | Fish | No data available |
| | EC ₅₀ | Invertebrate | No data available |
| | EC ₅₀ | Algae | No data available |

Persistence and Degradability: No data available
Bioaccumulative Potential: No data available
Mobility in Soil: No data available
Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

Disposal instructions:

Product - The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any byproducts should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Contaminated packaging - Do not reuse the empty jugs. Triple rinse (or equivalent) after use. Recycle decontaminated containers is the best option of container disposal. Totes may be recycled with new polyethylene bladders added. Comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

SECTION 14: Transport Information

Shipping information such as shipping classification:

Ship and store away from food, feed, seed, cosmetics, and medical supplies Bill of Lading Description
 UN1760 CORROSIVE LIQUID, N.O.S. (monocarbamide dihydrogen sulfate .8), PG: III.
 DOT Placard Required: TDG Class 8

SECTION 15: Regulatory Information

CANADA:

Canada Domestic Substances List (DSL): Monocarbamide dihydrogen sulphate and Zinc sulphate monohydrate are listed on the DSL

Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that meet the human health criteria for categorization: None of the components are listed.

Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that are Inherently Toxic to the Environment: Zinc sulphate monohydrate (as Sulfuric acid, zinc salt (1:1), monohydrate) is listed.

Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that are Persistent and Inherently Toxic to the Environment (PiT): Zinc sulphate monohydrate (as Sulfuric acid, zinc salt (1:1), monohydrate) is listed.

Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that are Persistent to the environment: Zinc sulphate monohydrate (as Sulfuric acid, zinc salt (1:1) is listed.

Canada Ingredient Disclosure List (SOR/88-64): Manganese sulphate monohydrate (Manganèse, composés, n.s.a.) is listed on the Canada Ingredient Disclosure List.

Canada National Pollutant Release Inventory (NPRI): Manganese sulphate monohydrate (Manganese (and its compounds)) and Zinc sulphate monohydrate (Zinc (and its compounds)) are listed on the Canada National Pollutant Release Inventory.

Canada - Alberta Water quality guidelines for the protection of agricultural water uses: Manganese sulphate monohydrate (Manganese - total) and Zinc sulphate monohydrate (Zinc – total) are listed on the Alberta Water quality guidelines.

Canada Toxicological Index Service - Workplace Hazardous Materials Information System – WHMIS

| Component | Classification code |
|--------------------------------|---------------------|
| Manganese sulphate monohydrate | D2B |
| PRODUCT | D2B, E. |

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

CERCLA Hazardous Substance List, 40 CFR 302.4:

| Component | Statutory code |
|---|----------------|
| Manganese sulfate monohydrate (Manganese Compounds) | 3 |

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: Yes

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

| Component | CAS No. | Concentration |
|--------------------------------|------------|---------------|
| Manganese Sulphate Monohydrate | 10034-96-5 | 1 – 10% |
| Zinc Sulfate Monohydrate | 7446-19-7 | 1 – 10% |

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

Massachusetts Right to Know: Zinc Sulfate Monohydrate is listed on the Massachusetts Right to Know List.

New Jersey Right to Know: Manganese Sulfate Monohydrate and Zinc Sulphate Monohydrate are listed on the New Jersey Right to Know List.

Pennsylvania Right to Know: Manganese Sulfate Monohydrate and Zinc Sulphate Monohydrate are listed on the Pennsylvania Right to Know List.

SECTION 16: Other Information

Revision Date: May 01, 2019

To the best of our knowledge, the information contained herein is accurate. However, Crop Aid Nutrition Ltd. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.